



February 20, 2004

Ms. Terese Van Donsel
United States Environmental Protection Agency
Office of Superfund, Region 5
Attention: S-6J
77 West Jackson
Chicago, IL 60604-3590

Subject: Expansion of DNAPL Extraction System/ Preparation of Operations and
Monitoring Plan, letter dated January 7, 2004, from USEPA to Detrex.
Fields Brook Superfund Site
Detrex Source Area-Ashtabula, Ohio
Docket No. -V-W-98-C-450

Dear Ms. Van Donsel,

Attached are a discussion of planned experimental wells and a site plan showing the approximate location of the additional wells. The O&M plan will be sent to you on March 5.

If you have any questions, please contact me at (440) 997-6131, ext. 201.

Sincerely,

Thomas W. Steib
Operations Manager

cc: T. Mark, T. Doll, D. Church, R. Currie, URS

**DNAPL Recovery System Expansion
Detrex Corporation
Ashtabula, OH 44004
February 17, 2004**

Introduction

Beginning in the winter of 2002, Detrex Corporation (Detrex) has operated a DNAPL recovery system at their facility located at 1100 North State Road in Ashtabula, OH. The system components include:

- 12 recovery wells (7 of which are currently operational)
- 2 pump stations from which pressure and vacuum are applied to the wells
- 1 treatment building where the DNAPL is separated from water and silt
- 1 collection tank where the DNAPL is temporarily collected for disposal
- Activated carbon filters where exhaust air is cleaned and discharged to the atmosphere.

Operations of the recovery system have been intermittent due to the collection of solids in the DNAPL with associated excessive clogging of system components. In addition, the pumping system used to remove the DNAPL from the wells includes down pressure to provide additional lift to bring the DNAPL to the ground surface. The down pressure that is needed to pump the DNAPL from underground to our treatment system has caused short circuits to the ground surface with resultant release of pressure to the atmosphere at some of the wells. The wells where this pressure release occurred have since been capped and are not operating. Currently the system has been inoperable as a result of freezing due to winter conditions in Ashtabula, Ohio. The system has gone through extensive rework during 2003 to try to remedy the persistent problems and enhance the operation of DNAPL recovery system. Detrex expects that when the weather is warmer, the system will again become operable in its reduced state.

As a part of the U.S. EPA Unilateral Administrative Order signed by Detrex in 1998, the DNAPL recovery system is to be expanded to recovery more DNAPL from the source area on the property. Due to the operational difficulties experienced, Detrex proposes to install two additional experimental recovery wells using a different collection technology. The exact design will be determined after the EPA group from Ada, Oklahoma, has had a chance to witness the current DNAPL recovery system in operation and had discussions with Detrex and URS personnel. At that time, personnel from Detrex and URS will design the wells, after input from the EPA. At the present time, a well design that may work in this DNAPL recovery situation is not known.

Recovery Well Installation

The existing recovery system includes a total of 12 collection wells. The recovery system is illustrated on the attached site plan. The two new recovery wells will be located in the vicinity of #3 and #10. Both of these wells are capped off. When they were operating, both of these wells showed significant amount of DNAPL recovery.

Approximate locations are shown on the attached figure. It is thought that installation of the new wells in these areas will show us if the wells will work or not.

The two new wells will be installed using sonic drilling techniques to minimize formation disturbance and cuttings disposal. A sonic drilling rig has a specially designed hydraulically powered drill head or oscillator which generates adjustable high frequency vibrations. The sonic head is attached directly to the drill string sending high frequency vibrations down through the drill steel to the face of the drill bit. The vibration frequency is controlled to suit operating conditions and to achieve optimum drilling rates. When the vibrations coincide with the natural resonate frequency of the steel drill rod, resonance occurs and the energy of the system is applied to the drill bit. The drill string is slowly rotated at the same time as it is vibrated to uniformly apply the drilling energy to the drill bit. The soil particles along the side of the drill string and at the drill bit tend to "fluidize" or move away from the drill string which is the way the hole is advanced. In this manner, the hole is advanced with no cuttings except the volume of the drill string. Six inch diameter holes will be used to construct the recovery wells at Detrex. The drilling technique will minimize the disturbance that normally accompanies the installation of wells with conventional rotary drilling techniques using hollow stem augers.

The two new recovery wells will be installed to the same depths as wells #3 and #10.

DNAPL Recovery System

The two additional experimental wells will be installed close to the current wells so that we may use the current collection system to decant and treat the water and collect the DNAPL for disposal. Performance of the existing system indicates that DNAPL will not flow into the recovery wells without the assistance from vacuum applied to the well. For this reason, the two additional experimental recovery wells will be constructed with vacuum applied to the well casing in a similar manner as the existing system. The vacuum systems from wells #2 and #11 will be used on the two additional experimental recovery wells.

Monitoring systems currently used on the existing recovery wells will be used on the two new wells to monitor their production.

